

MAGNETIC POLE FABRICATION PROCESS AND DEVICE

ABSTRACT OF THE DISCLOSURE

5 A method and apparatus for fabricating an electroplating mask for the
formation of a miniature magnetic pole tip structure. The method incorporates a
silylation process to silylate photoresist after creating a photoresist cavity or trench
in the electroplating mask. The silylation process is performed after a dry etch of
the photoresist. Alternatively, silylation is performed after a lithographic patterning
of the trench. As a result of chemical biasing, the vertical side walls of the
10 photoresist layer shift inward creating a narrower trench. The resulting structure
formed after electroplating has a width of less than 0.3 micrometers. This structure
can be used as a magnetic pole of a thin film head ("TFH") for a data storage
device.